

LISTING OF CLAIMS:

Claims 1 and 2 (Cancel)

Claim 3 (Currently amended) The surface-modified, pyrogenically produced oxides doped by aerosol, characterized in that the oxides are selected from the group consisting of SiO_2 , Al_2O_3 , TiO_2 , B_2O_3 , ZrO_2 , In_2O_3 , ZnO , Fe_2O_3 , Nb_2O_5 , V_2O_5 , WO_3 , SnO_2 and GeO_2 according to claim 1 or 2, wherein the surface-is modified with one or several compounds selected from the following groups:

a) Organosilanes ~~mixture~~ having either the formulas $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$ or $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n-1})$, wherein

R = alkyl, and

n = 1 – 20;

b) Organosilanes ~~mixture~~ having either the formulas $\text{R}'_x (\text{RO})_y \text{Si}(\text{C}_n\text{H}_{2n+1})$ or $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$, wherein

R = alkyl,

R' = alkyl,

R' = cycloalkyl

n = 1 – 20,

x+y = 3,

$x = 1$, or 2 , and

$y = 1$, or 2 ;

c) Halogen organosilanes having either ~~the~~ formulas $X_3 Si(C_nH_{2n+1})$ or ~~and~~ $X_3 Si(C_nH_{2n-1})$,

wherein

$X = Cl$, or Br , and

$n = 1 - 20$;

d) Halogen organosilanes having either ~~the~~ formulas $X_2 (R') Si(C_nH_{2n+1})$ or ~~and~~

$X_2 (R') Si(C_nH_{2n-1})$, wherein

$X = Cl$, or Br

$R' = \text{alkyl}$,

$[[R' =]]$ cycloalkyl, and

$n = 1 - 20$;

e) Halogen organosilanes having ~~the~~ formulas $X (R')_2 Si(C_nH_{2n+1})$ ~~and~~ or

$X (R')_2 Si(C_nH_{2n-1})$, wherein

$X = Cl$, or Br ;

$R' = \text{alkyl}$,

$[[R' =]]$ cycloalkyl, and

$n = 1 - 20$;

f) Organosilanes having the formula $(\text{RO})_3\text{Si}(\text{CH}_2)_m\text{-R}'$

$\text{R} = \text{alkyl},$

$m = 0, \text{ or } 1\text{-}20, \text{ and}$

$\text{R}' = \text{methyl-}, \text{ aryl-}, \text{-C}_6\text{H}_5, \text{ substituted phenyl groups},$

$\text{-C}_4\text{F}_9, \text{OCF}_2\text{-CHF-CF}_3, \text{-C}_6\text{F}_{13}, \text{-O-CF}_2\text{-CHF}_2,$

$\text{-NH}_2, \text{=N}_3, \text{-SCN}, \text{-CH=CH}_2, \text{-NH-CH}_2\text{-CH}_2\text{-NH}_2,$

$\text{-N-(CH}_2\text{-CH}_2\text{-CH}_2\text{NH}_2)_2,$

$\text{-OOC(CH}_3\text{)[[c]]C=CH}_2,$

$\text{-OCH}_2\text{-CH(O)CH}_2,$

$\text{-NH-CO-N-CO- (CH}_2\text{)}_5,$

$\text{-NH-COO-CH}_3, \text{-NH-COO-CH}_2\text{-CH}_3, \text{-NH-(CH}_2\text{)}_3\text{Si(OR)}_3,$

$\text{-S}_x\text{-(CH}_2\text{)}_3\text{Si(OR)}_3, \text{ where } x \text{ is one or more},$

$\text{-SH}, \text{ or}$

$\text{-NR}'\text{R}''\text{R}''', \text{ wherein } \text{R}' = \text{alkyl, or aryl; } \text{R}'' = \text{H, alkyl, aryl; and } \text{R}''' = \text{H, alkyl, aryl},$

$\text{benzyl, or C}_2\text{H}_4\text{N(R}''''\text{)}_2 \text{R}'''' \text{ with, wherein } \text{R}'''' = \text{H, or alkyl and}$

$\text{R}'''' = \text{H, or alkyl},$

g) Organosilanes having the formula $(\text{R}'')_x (\text{RO})_y \text{Si}(\text{CH}_2)_m\text{-R}', \text{ wherein}$

$\text{R}'' = \text{alkyl, or cycloalkyl},$

$x+y = 2,$

$x = 1, \text{ or } 2,$

$y = 1, \text{ or } 2,$

m = 0, or 1 to 20, and

R' = methyl-, aryl, -C₆H₅, substituted phenyl groups,

-C₄F₉, -OCF₂-CHF-CF₃, -C₆F₁₃, -O-CF₂-CHF₂,

-NH₂, -N₃, SCN, -CH=CH₂, -NH-CH₂-CH₂-NH₂,

-N-(CH₂-CH₂-NH₂)₂,

-OOC (CH₃)C = CH₂,

-OCH₂-CH(O) CH₂,

-NH-CO-N-CO-(CH₂)₅,

-NH-COO-CH₃, -NH-COO-CH₂-CH₃, -NH-(CH₂)₃Si(OR)₃,

-S_x-(CH₂)₃Si(OR)₃,

-SH , or

-NR'R''R''', wherein R' = alkyl; or aryl; R'' = H,

alkyl, or aryl; and R''' = H, alkyl, aryl, benzyl, or

C₂H₄N(R''')₂ ~~R''''~~ with, wherein R'''' = H, or alkyl and

~~R'''' = H, alkyl) ;~~

h) Halogen organosilanes having the formula X₃Si (CH₂)_m-R', wherein

X = Cl, or Br,

m = 0, 1 – 20,

R' = methyl-, aryl-, -C₆H₅, substituted phenyl groups

-C₄F₉, -OCF₂-CHF-CF₃, -C₆F₁₃, -O-CF₂-CHF₂,

-NH₂, -N₃, SCN, -CH=CH₂, -NH-CH₂-CH₂-NH₂,

$-\text{N}-(\text{CH}_2-\text{CH}_2-\text{NH}_2)_2$,
 $-\text{OOC}(\text{CH}_3)\text{C}=\text{CH}_2$,
 $-\text{OCH}_2-\text{CH}(\text{O})\text{CH}_2$,
 $-\text{NH}-\text{CO}-\text{N}-\text{CO}-(\text{CH}_2)_5$,
 $-\text{NH}-\text{COO}-\text{CH}_3$, $-\text{NH}-\text{COO}-\text{CH}_2-\text{CH}_3$, $-\text{NH}-(\text{CH}_2)_3\text{Si}(\text{OR})_3$,
 $-\text{S}_x-(\text{CH}_2)_3\text{Si}(\text{OR})_3$, where x is one or more, or
 $-\text{SH}$;

i) Halogen organosilanes having the formula $(\text{R})\text{X}_2\text{Si}(\text{CH}_2)_m-\text{R}'$, wherein

$\text{X} = \text{Cl}$, or Br ,

$\text{R} =$ alkyl such as methyl-, [[-]] ethyl-, or propyl-,

$m = 0$, or $1 - 20$, and

$\text{R}' =$ methyl-, aryl-, $-\text{C}_6\text{H}_5$, substituted phenyl groups,

$-\text{C}_4\text{F}_9$, $-\text{OCF}_2-\text{CHF}-\text{CF}_3$, $-\text{C}_6\text{F}_{13}$, $-\text{O}-\text{CF}_2-\text{CHF}_2$,

$-\text{NH}_2$, $-\text{N}_3$, SCN , $-\text{CH}=\text{CH}_2$, $-\text{NH}-\text{CH}_2-\text{CH}_2-\text{NH}_2$,

$-\text{N}-(\text{CH}_2-\text{CH}_2-\text{NH}_2)_2$,

$-\text{OOC}(\text{CH}_3)\text{C}=\text{CH}_2$,

$-\text{OCH}_2-\text{CH}(\text{O})\text{CH}_2$,

$-\text{NH}-\text{CO}-\text{N}-\text{CO}-(\text{CH}_2)_5$,

$-\text{NH}-\text{COO}-\text{CH}_3$, $-\text{NH}-\text{COO}-\text{CH}_2-\text{CH}_3$,

$-\text{NH}-(\text{CH}_2)_3\text{Si}(\text{OR})_3$,

$-\text{S}_x-(\text{CH}_2)_3\text{Si}(\text{OR})_3$, where x is one or more, or

-SH;

(j) Halogen organosilanes having the formula $(R)_2X Si(CH_2)_m-R'$, wherein

X = Cl, or Br,

R = alkyl,

m = 0, or 1 – 20, and

R' = methyl-, aryl-, $-C_6H_5$, substituted phenyl groups,

$-C_4F_9$, $-OCF_2-CHF-CF_3$, $-C_6F_{13}$, $-O-CF_2-CHF_2$,

$-NH_2$, $-N_3$, SCN, $-CH=CH_2$, $-NH-CH_2-CH_2-NH_2$,

$-N-(CH_2-CH_2-NH_2)_2$,

$-OOC(CH_3)C=CH_2$,

$-OCH_2-CH(O)CH_2$,

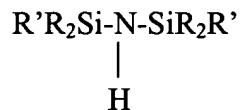
$-NH-CO-N-CO-(CH_2)_5$,

$-NH-COO-CH_3$, $-NH-COO-CH_2-CH_3$, $-NH-(CH_2)_3Si(OR)_3$,

$-S_x-(CH_2)_3Si(OR)_3$, where x is one or more, or

-SH;

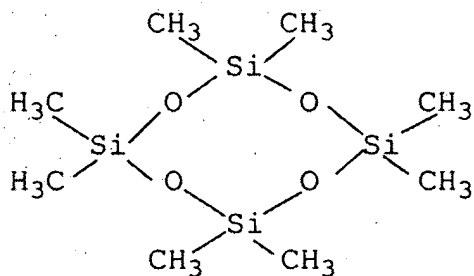
(k) Silazanes having the formula



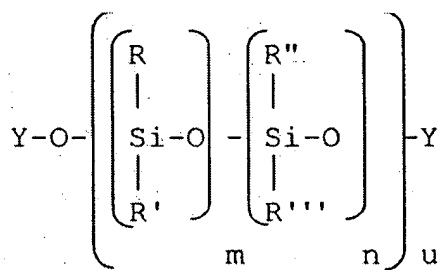
wherein R = alkyl, and

R' = alkyl, or vinyl; or

(l) Cyclic polysiloxanes D 3, D 4 or D 5, where D4 has the formula:



m) Polysiloxanes or silicone oils having any one of the formula



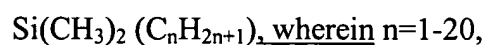
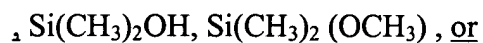
$$m = 0, 1, 2, 3, \dots, \infty$$

$$n = 0, 1, 2, 3, \dots, \infty$$

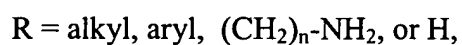
$$u = 0, 1, 2, 3, \dots, \infty$$

$$Y = CH_3, H, C_nH_{2n+1} \quad n=1-20$$

$$Y = Si(CH_3)_3, Si(CH_3)_2H$$



wherein,



R' = alkyl, aryl, (CH₂)_n-NH₂, or H,

R'' = alkyl, aryl, (CH₂)_n-NH₂, or H,

R''' = alkyl, aryl, (CH₂)_n-NH₂, or H;

Claim 4 (Currently amended) A method of producing the surface-modified oxides in accordance with claim 3 ~~1-or 2~~, comprising placing pyrogenically produced oxides doped by aerosol in a suitable mixing container, spraying the oxides under intensive mixing with the surface-modification reagent or a mixture of several surface-modification reagents.

Claim 5 (Currently amended) In a reinforcing filler composition wherein the improvement comprises the surface-modified oxides according to claim 3 ~~1-or 2~~ as reinforcing filler.

Claim 6 (Original) The method of claim 4 wherein the spraying step includes spraying with water and/or acid prior to the spraying with the surface-modification reagent or a mixture of several surface-modification reagents.

Claim 7 (Original) The method of claim 4 further comprising re-mixing at 15 to 30 minutes and tempering at a temperature of 100 to 400 °C for a period of 1 to 6 hours.

Claim 8 (Original) The surface-modified, pyrogenically produced oxides according to claim 3 wherein the cyclic polysiloxanes is type D 4.

Claim 9 (Original) The surface-modified, pyrogenically produced oxides according to claim 8 wherein the type D4 cyclic polysiloxanes is octamethylcyclotetrasiloxane.